

**SafetyLit 25<sup>th</sup> June 2017****A growing problem of falls in the aging population: a case study on Poland - 2015-2050 forecast**

Kłak A, Raciborski F, Targowski T, Rzdokiewicz P, Bousquet J, Samoliński B.

*Eur. Geriatr. Med.* 2017; 8(2): 105-110.

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**Abstract**

Poland entered the period of intensive aging of population. In the coming 25 years, the percentage of persons aged 65 and over in Poland will increase from 13% of the total population in 2010 to 23% in 2035 (ca. 10 million). The problem of falls resulting from aging of the body was presented using the example of Poland. The article describes main issues related to etiology, epidemiology, diagnosis, prevention and social consequences of falls caused by the impairment of musculoskeletal system in the group of persons aged 65 and over. The authors present the prospective estimation of falls in Poland until 2050. The article underlines key role of diagnosis and prevention of falls of older persons.

**PDF Y Endnote Y****A narrative synthesis of Nintendo Wii Fit gaming protocol in addressing balance among healthy older adults: what system works?**

Manlapaz DG, Sole G, Jayakaran P, Chapple CM.

*Games Health J.* 2017; 6(2): 65-74.

(Copyright © 2017, Mary Ann Liebert)

**DOI** 10.1089/g4h.2016.0082 **PMID** unavailable

**Abstract**

**BACKGROUND:** Balance is crucial in performing functional tasks particularly among older adults. Exergaming is gaining attention as a novel approach to enhance balance in a number of clinical populations.

**OBJECTIVES:** The aim of this review was to synthesize and present published evidence for Nintendo Wii Fit™ gaming system protocols. These include game preference, intervention setting, and exercise dosage for improving balance in healthy older adults. Commonly used outcome measures were also identified.

**METHODS:** A literature search was developed using the PICOS strategy using keywords such as "older adult," "Nintendo Wii Fit," "exergaming," and "balance" in the databases: MEDLINE, PubMed, EMBASE, CINAHL, Scopus, Science Direct, and Web of Science.

**RESULTS:** Sixteen articles were included with participants (n = 491) mostly female (69%), and mean age ranged between 71 and 85 years old. Participants were recruited mainly from the community. The most commonly used Wii Fit games were Table tilt, Soccer Heading, Ski Slalom, and Ski jump, performed three times per week, with a duration of 30 minutes per session for 6 weeks. Berg Balance Scale, Timed Up and Go Test, and Centre of Pressure were the most commonly used outcome measures.

**CONCLUSION:** Wii Fit exergames can be a potential alternative to improve balance if safety and technical procedures are provided. With conflicting and mechanism-based evidence on dosage presented, exergaming parameters require further research before firm recommendations can be made.

Clinically, effective dosage is an important component in any type of interventions, and exergaming should not be an exception.

#### **PDF Y Endnote Y**

#### **A pilot exploration of the effect of designated Function Focused Care on mobility, functional dependence and falls frequency in Dutch nursing home residents**

van der Ploeg ES, Leermakers ML.

Geriatr. Nurs. 2017; ePub(ePub): ePub.

Stichting Argos Zorggroep, Voorberghlaan 35, 3123 AX Schiedam, The Netherlands.

(Copyright © 2017, Elsevier Publishing)

**DOI** 10.1016/j.gerinurse.2017.04.009 **PMID** 28619675

#### **Abstract**

In recent years, there has been a gradual change in nursing home care from care providers doing as many things as possible for residents to a philosophy where patients are encouraged to become more involved in their care and activities of daily living. Function Focused Care (FFC) is a methodology to stimulate the involvement of residents on a daily basis that has shown to be safe and effective in improving ADL-functioning. We implemented FFC in four nursing homes with 53 residents. This first pilot project in Dutch nursing homes has replicated the finding that FFC inspires functional independence, but also revealed a reduction in the number of falls among fallers.

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#### **PDF Y Endnote Y**

#### **Access to information on home- and community-based services and functional status**

Cattagni Kleiner A, Santos-Eggimann B, Fustinoni S, Seematter-Bagnoud L.

*Int. J. Public Health* 2017; ePub(ePub): ePub.

**Affiliation:** Institute of Social and Preventive Medicine, Lausanne University Hospital, Route de la Corniche 10, Lausanne, 1010, Switzerland.

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**DOI** 10.1007/s00038-017-0990-5 **PMID** 28620770

#### **Abstract**

**OBJECTIVES:** To examine differences in access to home- and community-based service (HCBS) information among older adults of different functional status.

**METHODS:** Cross-sectional survey of 5435 out of 11,000 randomly selected Swiss older community dwellers from the state of Vaud. Analyses stratified by functional status examined characteristics associated with limited access to HCBS information, based on self-reported knowledge on where to find information on 13 HCBS.

**RESULTS:** Proportionally, more individuals did not know where to look for information in the functionally vulnerable group than in the robust and dependent ones for virtually each service. Among robust individuals, males and persons with low financial status had increased odds of limited access. Low financial status was also negatively associated with access to information among vulnerable people. Belonging to the youngest group increased the odds of limited access for dependent individuals.

**CONCLUSIONS:** Efforts should be made to improve elders' access to HCBS information by developing specific strategies relevant to each functional status group. Further studies on access to HCBS

information should be conducted using complex conceptual frameworks as it has been done for HCBS use.

#### PDF Y Endnote Y

### **An unobtrusive fall detection and alerting system based on Kalman filter and Bayes network classifier**

He J, Bai S, Wang X.

*Sensors (Basel)* 2017; 17(6): s17061393.

**Affiliation:** School of Software Engineering, Beijing University of Technology, Beijing 100124, China.  
wxy@bjut.edu.cn.

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**DOI** 10.3390/s17061393 **PMID** 28621709

#### **Abstract**

Falls are one of the main health risks among the elderly. A fall detection system based on inertial sensors can automatically detect fall event and alert a caregiver for immediate assistance, so as to reduce injuries causing by falls. Nevertheless, most inertial sensor-based fall detection technologies have focused on the accuracy of detection while neglecting quantization noise caused by inertial sensor. In this paper, an activity model based on tri-axial acceleration and gyroscope is proposed, and the difference between activities of daily living (ADLs) and falls is analyzed. Meanwhile, a Kalman filter is proposed to preprocess the raw data so as to reduce noise. A sliding window and Bayes network classifier are introduced to develop a wearable fall detection system, which is composed of a wearable motion sensor and a smart phone. The experiment shows that the proposed system distinguishes simulated falls from ADLs with a high accuracy of 95.67%, while sensitivity and specificity are 99.0% and 95.0%, respectively. Furthermore, the smart phone can issue an alarm to caregivers so as to provide timely and accurate help for the elderly, as soon as the system detects a fall.

#### PDF Y Endnote Y

### **Are older fallers different? Comparing older fallers and non-fallers in a developing country**

Yogi RR, Sammy I, Paul JF, Nunes P, Robertson P, Ramcharitar Maharaj V.

*Trauma (Sage)* 2017; ePub(ePub): ePub.

(Copyright © 2017, Sage Publications)

**DOI** 10.1177/1460408617693264 **PMID** unavailable

#### **Abstract**

**OBJECTIVES:** Falls are common in older people, causing significant mortality and morbidity, but little is known about this phenomenon in developing countries. This study aimed to investigate falls in older people in the developing world, comparing fallers with other trauma patients.

**METHODS:** We conducted a prospective observational study of older trauma patients in Trinidad over a four-month period, comparing falls victims with other trauma patients, in relation to their demographic, pre-morbid and injury characteristics.

**RESULTS:** A total of 439 older trauma patients (aged  $\geq 65$  years) were included. Fallers were older (median age 75 years (interquartile range 65?89 years) vs. 70 years (interquartile range 65?79 years) in non-fallers). Overall, 65.2% of fallers were female, compared to 43.7% of non-fallers. Fallers were more likely to suffer from multiple pre-existing diseases, with 29.8% having  $\geq 3$  comorbidities, compared to 9.7% of non-fallers. Fallers were also more likely to be on multiple medications: 7.1%

were on five medications, compared to no non-fallers. Fallers also sustained more severe injuries and presented with higher acuity than non-fallers. Admission and referral rates were higher among fallers compared to other trauma patients (59.9% vs. 30.4%).

**CONCLUSIONS:** Older patients who fall are a distinct group from other older trauma patients, with unique demographic, clinical and injury-related characteristics. This information is useful in planning preventive and management strategies for these patients.

#### **PDF Y Endnote Y**

##### **Availability of the Two-step Test to evaluate balance in frail people in a day care service**

Kojima K, Kamai D, Ishitani S, Watanabe S.

*J. Phys. Ther. Sci.* 2017; 29(6): 1025-1028.

**Affiliation:** Department of Rehabilitation, Faculty of Health Science and Technology, Kawasaki University of Medical Welfare, Japan.

(Copyright © 2017, Society of Physical Therapy Science)

**DOI** 10.1589/jpts.29.1025 **PMID** 28626315 **PMCID** PMC5468190

##### **Abstract**

**PURPOSE:** This study evaluated balance tests in users of a day care service who needed nursing care or support, and investigated the usefulness of the Two-step Test for evaluating balance.

**SUBJECTS AND METHODS:** The subjects were users of a day care service, and had certified need for long-term care or support. All subjects were able to undergo the balance evaluations. Balance tests included the 3-m Timed Up and Go test (TUG), the one-leg standing time, and the Two-step Test.

**RESULTS:** The Two-step Test and other balance tests were strongly correlated.

**CONCLUSION:** In this study of subjects who needed nursing care or support, the results were the same as in a previous study of subjects who did not need nursing care or support. The Two-step Test should be considered as an indicator of balance ability in elderly individuals requiring nursing care or support.

#### **PDF Y Endnote Y**

##### **Dance movement therapy and falls prevention**

Veronese N, Maggi S, Schofield P, Stubbs B.

*Maturitas* 2017; 102: 1-5.

**Affiliation:** Faculty of Health, Social Care and Education, Anglia Ruskin University, Chelmsford, United Kingdom; South London and Maudsley NHS Foundation Trust, Denmark Hill, London SE5 8AZ, United Kingdom; Institute of Psychiatry, Psychology and Neuroscience, King's College London, De Crespigny Park, London SE5 8 AF, United Kingdom. Electronic address: brendon.stubbs@kcl.ac.uk.

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**DOI** 10.1016/j.maturitas.2017.05.004 **PMID** 28610676

##### **Abstract**

Falls are a leading cause of morbidity, healthcare use and mortality. Dance is a popular form of physical activity among older people and previous research has suggested that it may improve various health outcomes in this population, including balance, gait and muscle performance. A systematic review of the potential benefits of dance on falls and fear of falling is lacking. Thus, we conducted a systematic review considering all randomized controls trials (RCTs) investigating if dance can reduce falls and improve fear of falling in older adults. Major databases were searched from inception until 1 March 2017 and a total of 10 RCTs were identified, which included a total of

680 people (n=356 dance, n=324 control). Overall, the mean age of the samples was 69.4 years, and 75.2% were female. Across four RCTs, dance therapy reduced falls versus usual care in only one study. Dance therapy improved fear of falling in two out of three included RCTs. There were no serious adverse events reported in the RCTs. In summary, we found a paucity of studies investigating the effect of dance on falls and fear of falling and the evidence base is preliminary and equivocal. Given the heterogeneity of the included samples and interventions, in addition to the short-term follow-up, no firm conclusions can be drawn. However, dance appears to be safe and, given its popularity and demonstrated benefits on other health/wellbeing outcomes in older adults, it is important that future research considers its potential benefits on falls/fear of falling in older age.

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#### PDF Y Endnote Y

#### **Development and validation of the Self-Awareness of Falls in Elderly Scale among elderly inpatients**

Shyu ML, Huang HC, Wu MJ, Chang HJ.

*Clin. Nurs. Res.* 2017; ePub(ePub): ePub.

**Affiliation:** Taipei Medical University, Taiwan.

(Copyright © 2017, Sage Publications)

**DOI** 10.1177/1054773817714663 **PMID**28627232

#### **Abstract**

The objectives of this study were to develop the Self-Awareness of Falls in Elderly (SAFE) scale and test its reliability and validity among elderly inpatients. A cross-sectional study design and convenience sampling were used to test the validity and reliability of the SAFE scale. Explanatory factor analysis and confirmatory factor analysis yielded an acceptable goodness of model fit, confirming the 21 items in the SAFE scale that were distributed among four factors: awareness of activity safety and environment, awareness of physical functions, awareness of medication, and awareness of cognitive behavior. The values of interrater reliability and Cronbach's alpha were at least .70, indicating that reliability of the SAFE scale was acceptable. The SAFE scale is the first instrument to measure self-awareness of fall risk among high-risk groups. Further management and fall prevention can then be designed to reduce the incidence of falls among elderly people in clinical care.

#### PDF Y Endnote Y

#### **Effect of pilates exercise for improving balance in older adults (PEDro synthesis)**

Grande GHD, Padulla SAT, Franco MR.

*Br. J. Sports Med.* 2016; ePub(ePub): ePub.

(Copyright © 2016, BMJ Publishing Group)

**DOI** 10.1136/bjsports-2016-097073 **PMID** unavailable

#### **Abstract**

This section features a recent systematic review that is indexed on PEDro, the Physiotherapy Evidence Database (<http://www.pedro.org.au>). PEDro is a free, web-based database of evidence relevant to physiotherapy.

► Barker AL, Bird ML, Talevski J. Effect of Pilates exercise for improving balance in older adults: a systematic review with meta-analysis. *Arch Phys Med Rehabil* 2015;96:715-23.

Falls among older adults are considered an important source of disability, mortality and healthcare use.<sup>1</sup> One crucial modifiable risk factor for falls is balance impairment.<sup>2,3</sup> Hence, exercises that target balance improvement have been considered an essential component of fall prevention programmes.<sup>4</sup> Pilates is a type of mind-body exercise that focuses on improving strength, core stability, flexibility, muscle control, posture and breathing.<sup>5</sup> Various pilates exercises challenge balance.

The primary aim of this systematic review was to evaluate the effect of pilates on balance and falls in older adults. A secondary aim was to identify whether pilates programmes investigated in previous studies met the best practice recommendations for exercise to prevent falls, that is: (1) exercises provided a moderate or high challenge to balance (ie, performed in standing).

#### PDF Y Endnote Y

##### **Effects of a community disability prevention program for frail older adults at 48-month follow up**

Makizako H, Shimada H, Doi T, Tsutsumimoto K, Yoshida D, Suzuki T.

*Geriatr. Gerontol. Int.* 2017; ePub(ePub): ePub.

**Affiliation:** Research Institute for Gerontology, J.F. Oberlin University, Tokyo, Japan.

(Copyright © 2017, Japan Geriatrics Society, Publisher John Wiley and Sons)

**DOI** 10.1111/ggi.13072 **PMID** 28627050

#### **Abstract**

**AIM:** The present prospective study was carried out to determine whether participation in community-based intervention studies exerted a positive impact on disability prevention in older adults with physical frailty.

**METHODS:** A total of 514 community-dwelling older adults (aged  $\geq 65$  years) with physical frailty who had undergone baseline assessment and participated in community-based intervention studies (participants) or did not (non-participants) were included in the present study. Non-participants were selected through propensity score matching, to balance potential covariates at baseline. Disability incidence was followed up at 48 months as a main outcome. Demographic data (age, sex and medical history), global cognitive function, grip strength, walking speed, and blood test results including serum albumin and brain-derived neurotrophic factor at baseline were included as covariates.

**RESULTS:** Disability incidence rates differed significantly between participants (11.3%) and non-participants (19.8%) of community-based intervention studies during the 48-month follow-up period ( $P = 0.007$ ). Participation in community-based intervention studies (hazard ratio 0.55, 95% confidence interval 0.35-0.88) was significantly associated with the incidence of disability in older adults with physical frailty.

**CONCLUSIONS:** Participation in community-based intervention studies could reduce the incidence of disability in older adults with physical frailty. Thus, strategies designed to increase the number of participants in community-based intervention programs should be considered in community-based approaches for the prevention of disability in older adults with physical frailty.

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#### PDF Endnote

### **Facilitating aging in place: a qualitative study of practical problems preventing people with dementia from living at home**

Thoma-Lürken T, Bleijlevens MHC, Lexis MAS, de Witte LP, Hamers JPH.

*Geriatr. Nurs.* 2017; ePub(ePub): ePub.

**Affiliation:** Maastricht University, CAPHRI Care and Public Health Research Institute, Department of Health Services Research, Living Lab on Aging and Long-Term Care, Maastricht, The Netherlands. (Copyright © 2017, Elsevier Publishing)

**DOI** 10.1016/j.gerinurse.2017.05.003 **PMID** 28624128

#### **Abstract**

Although the majority of people with dementia wish to age in place, they are particularly susceptible to nursing home admission. Nurses can play an important role in detecting practical problems people with dementia and their informal caregivers are facing and in advising them on various ways to manage these problems at home. Six focus group interviews (n = 43) with formal and informal caregivers and experts in the field of assistive technology were conducted to gain insight into the most important practical problems preventing people with dementia from living at home. Problems within three domains were consistently described as most important: informal caregiver/social network-related problems (e.g. high load of care responsibility), safety-related problems (e.g. fall risk, wandering), and decreased self-reliance (e.g. problems regarding self-care, lack of day structure). To facilitate aging in place and/or to delay institutionalization, nurses in community-based dementia care should focus on assessing problems within those three domains and offer potential solutions.

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**PDF Y Endnote Y**

### **Factors contributing to serious adverse events in nursing homes**

Andersson Å, Frank C, Willman AML, Sandman PO, Hansebo G.

*J. Clin. Nurs.* 2017; ePub(ePub): ePub.

**Affiliation:** Ersta Sköndal University College, Box 111 89, 100 61, Stockholm, Sweden.

(Copyright © 2017, John Wiley and Sons)

**DOI** 10.1111/jocn.13914 **PMID** 28618102

#### **Abstract**

**AIMS AND OBJECTIVES:** The aim of this study was to identify the most common serious adverse events that occurred in nursing homes and their most frequent contributing factors to contribute to improvement of safe nursing care.

**BACKGROUND:** There is a need to improve safe nursing care in nursing homes. Residents are often frail and vulnerable with extensive needs for nursing care. A relatively minor adverse event in nursing care can cause serious injury that could have been preventable.

**DESIGN:** This was a retrospective study, with a total sample of data regarding adverse events (n=173) in nursing homes, concerning nursing care reported by health care providers in Sweden to the Health and Social Care Inspectorate. The reports were analysed with content analysis and the frequencies of the adverse events, and their contributing factors, were described with descriptive statistics.

**RESULTS:** Medication errors, falls, delayed or inappropriate intervention and missed nursing care caused the vast majority (89%) of the serious adverse events. A total of 693 possible contributing factors were identified. The most common contributing factors were 1) lack of competence 2)

incomplete, or lack of documentation 3) teamwork failure 4) and inadequate communication.

**CONCLUSIONS:** The contributing factors frequently interacted yet they varied between different groups of serious adverse events. The resident's safety depends on the availability of staff's competence as well as adequate documentation about the resident's condition. Lack of competence was underestimated by health care providers. **RELEVANCE TO CLINICAL PRACTICE:** Registered Nurses and assistant nurses need to have awareness of contributing factors to adverse events in nursing care. A holistic approach to improve patient safety in nursing homes requires competence of the staff, safe environments as well as resident's and relative's participation. This article is protected by copyright. All rights reserved.

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**PDF Y Endnote Y**

**Fall detection for elderly from partially observed depth-map video sequences based on view-invariant human activity representation**

Alazrai R, Momani M, Daoud MI. *Appl. Sci. (Basel)* 2017; 7(4): 316.

(Copyright © 2017, MDPI: Multidisciplinary Digital Publishing Institute)

**DOI** 10.3390/app7040316 **PMID** unavailable

**Abstract**

This paper presents a new approach for fall detection from partially-observed depth-map video sequences. The proposed approach utilizes the 3D skeletal joint positions obtained from the Microsoft Kinect sensor to build a view-invariant descriptor for human activity representation, called the motion-pose geometric descriptor (MPGD). Furthermore, we have developed a histogram-based representation (HBR) based on the MPGD to construct a length-independent representation of the observed video subsequences. Using the constructed HBR, we formulate the fall detection problem as a posterior-maximization problem in which the posteriori probability for each observed video subsequence is estimated using a multi-class SVM (support vector machine) classifier. Then, we combine the computed posteriori probabilities from all of the observed subsequences to obtain an overall class posteriori probability of the entire partially-observed depth-map video sequence. To evaluate the performance of the proposed approach, we have utilized the Kinect sensor to record a dataset of depth-map video sequences that simulates four fall-related activities of elderly people, including: walking, sitting, falling from standing and falling from sitting. Then, using the collected dataset, we have developed three evaluation scenarios based on the number of unobserved video subsequences in the testing videos, including: fully-observed video sequence scenario, single unobserved video subsequence of random lengths scenarios and two unobserved video subsequences of random lengths scenarios. Experimental results show that the proposed approach achieved an average recognition accuracy of 93.6%, 77.6% and 65.1%, in recognizing the activities during the first, second and third evaluation scenario, respectively. These results demonstrate the feasibility of the proposed approach to detect falls from partially-observed videos.

**PDF Y Endnote Y**

**Fall prevention self-assessments via mobile 3D visualization technologies: community dwelling older adults' perceptions of opportunities and challenges**

Hamm J, Money A, Atwal A. *JMIR Hum. Factors* 2017; 4(2): e15.

**Affiliation:** School of Health and Social Care, London South Bank University, LONDON, United Kingdom.



(Copyright © 2017, JMIR Publications)

DOI 10.2196/humanfactors.7161 PMID 28630034

### Abstract

**BACKGROUND:** In the field of occupational therapy, the assistive equipment provision process (AEPP) is a prominent preventive strategy used to promote independent living and to identify and alleviate fall risk factors via the provision of assistive equipment within the home environment. Current practice involves the use of paper-based forms that include 2D measurement guidance diagrams that aim to communicate the precise points and dimensions that must be measured in order to make AEPP assessments. There are, however, issues such as "poor fit" of equipment due to inaccurate measurements taken and recorded, resulting in more than 50% of equipment installed within the home being abandoned by patients. This paper presents a novel 3D measurement aid prototype (3D-MAP) that provides enhanced measurement and assessment guidance to patients via the use of 3D visualization technologies.

**OBJECTIVE:** The purpose of this study was to explore the perceptions of older adults with regard to the barriers and opportunities of using the 3D-MAP application as a tool that enables patient self-delivery of the AEPP.

**METHODS:** Thirty-three community-dwelling older adults participated in interactive sessions with a bespoke 3D-MAP application utilizing the retrospective think-aloud protocol and semistructured focus group discussions. The system usability scale (SUS) questionnaire was used to evaluate the application's usability. Thematic template analysis was carried out on the SUS item discussions, think-aloud, and semistructured focus group data.

**RESULTS:** The quantitative SUS results revealed that the application may be described as having "marginal-high" and "good" levels of usability, along with strong agreement with items relating to the usability ( $P=.004$ ) and learnability ( $P<.001$ ) of the application. Four high-level themes emerged from think-aloud and focus groups discussions: (1) perceived usefulness (PU), (2) perceived ease of use (PEOU), (3) application use (AU) and (4) self-assessment (SA). The application was seen as a useful tool to enhance visualization of measurement guidance and also to promote independent living, ownership of care, and potentially reduce waiting times. Several design and functionality recommendations emerged from the study, such as a need to manipulate the view and position of the 3D furniture models, and a need for clearer visual prompts and alternative keyboard interface for measurement entry.

**CONCLUSIONS:** Participants perceived the 3D-MAP application as a useful tool that has the potential to make significant improvements to the AEPP, not only in terms of accuracy of measurement, but also by potentially enabling older adult patients to carry out the data collection element of the AEPP themselves. Further research is needed to further adapt the 3D-MAP application in line with the study outcomes and to establish its clinical utility with regards to effectiveness, efficiency, accuracy, and reliability of measurements that are recorded using the application and to compare it with 2D measurement guidance leaflets.

### PDF Y Endnote Y

#### **Falls and physical activity in persons with mild to moderate dementia participating in an intensive motor training: randomized controlled trial**

Zieschang T, Schwenk M, Becker C, Uhlmann L, Oster P, Hauer K.  
*Alzheimer Dis. Assoc. Disord.* 2017; ePub(ePub): ePub.

**Affiliation:** Agaplesion Bethanien Hospital, Centre for Geriatric Medicine §Institute of Medical Biometry and Informatics, University of Heidelberg ‡Network Aging Research, Heidelberg University, Heidelberg †Department of Clinical Gerontology, Robert Bosch Hospital, Stuttgart, Germany.  
(Copyright © 2017, Lippincott Williams and Wilkins)

**DOI** 10.1097/WAD.000000000000201 **PMID** 28628488

#### **Abstract**

**BACKGROUND:** Physical activity is beneficial in people with dementia. As physical activity increases risk exposure for falls, safety concerns arise. Prior exercise trials in people with dementia have not measured physical activity. Falls in relation to exposure time rather than person-years as outcome measure has been promoted but not investigated in people with dementia.

**METHODS:** Patients with mild to moderate dementia (n=110) were randomized to an intensive, progressive strength and functional training intervention or to a low-intensity group training for 12 weeks each. Physical activity was measured with a standardized questionnaire. Falls were documented prospectively by calendars for 12 months.

**RESULTS:** During the intervention, physical activity was significantly higher in the intervention group ( $P < 0.001$ ) without an increased fall rate (intervention group vs. CONTROL GROUP: 2.89 vs. 1.94; incidence rate ratio, 1.49; 95% confidence interval, 0.66-3.36;  $P = 0.333$ ). In the subgroup of multiple fallers, the number of falls per 1000 hours of activity was significantly lower in the intervention group (8.85 vs. 18.67;  $P = 0.017$ ).

**CONCLUSIONS:** Increased physical activity during exercise intervention was safe in people with mild to moderate dementia. Fall rate adjusted for physical activity is a useful and sensitive outcome measure in addition to fall rate per person-years.

**PDF Y Endnote Y**

#### **Frailsafe: early detection of frailty**

Riva G.

*Cyberpsychol. Behav. Soc. Netw.* 2017; 20(6): 404.

**Affiliation:** Applied Technology for Neuro-Psychology Lab, Istituto Auxologico Italiano, Milan, Italy.  
(Copyright © 2017, Mary Ann Liebert Publishers)

**DOI** 10.1089/cyber.2017.29076.ceu **PMID** 28622032

**Abstract** [Abstract unavailable]

**PDF Y Endnote Y**

#### **Gait classification of young adults, elderly non-fallers, and elderly fallers using micro-doppler radar signals: simulation study**

Saho K, Fujimoto M, Masugi M, Chou LS.

*IEEE Sens. J.* 2017; 17(8): 2320-2321.

(Copyright © 2017, IEEE (Institute of Electrical and Electronics Engineers))

**DOI** 10.1109/JSEN.2017.2678484 **PMID** unavailable

#### **Abstract**

This letter presents a gait classification technique for the identification of individuals with different gait patterns using simulated micro-Doppler radar remote sensing data. Proposed feature parameters for the classification are principal components of velocities extracted via micro-Doppler radar signals generated using motion capture-based kinematic data. Distinct differences were found

in the proposed parameters among three groups of subjects with different gait patterns: healthy young and elderly adults, and elderly adults with a history of falls (elderly fallers).

#### **PDF Y Endnote Y**

##### **Gender perspectives on views and preferences of older people on exercise to prevent falls: a systematic mixed studies review**

Sandlund M, Skelton DA, Pohl P, Ahlgren C, Melander-Wikman A, Lundin-Olsson L.

*BMC Geriatr.* 2017; 17: e58.

(Copyright © 2017, BioMed Central)

**DOI** 10.1186/s12877-017-0451-2 **PMID** unavailable

#### **Abstract**

**BACKGROUND:** To offer fall prevention exercise programs that attract older people of both sexes there is a need to understand both women's and men's views and preferences regarding these programs. This paper aims to systematically review the literature to explore any underlying gender perspectives or gender interpretations on older people's views or preferences regarding uptake and adherence to exercise to prevent falls.

**METHODS:** A review of the literature was carried out using a convergent qualitative design based on systematic searches of seven electronic databases (PubMed, CINAHL, Amed, PsycINFO, Scopus, PEDro, and OTseeker). Two investigators identified eligible studies. Each included article was read by at least two authors independently to extract data into tables. Views and preferences reported were coded and summarized in themes of facilitators and barriers using a thematic analysis approach.

**RESULTS:** Nine hundred and nine unique studies were identified. Twenty five studies met the criteria for inclusion. Only five of these contained a gender analysis of men's and women's views on fall prevention exercises. The results suggests that both women and men see women as more receptive to and in more need of fall prevention messages. The synthesis from all 25 studies identified six themes illustrating facilitators and six themes describing barriers for older people either starting or adhering to fall prevention exercise. The facilitators were: support from professionals or family; social interaction; perceived benefits; a supportive exercise context; feelings of commitment; and having fun. Barriers were: practical issues; concerns about exercise; unawareness; reduced health status; lack of support; and lack of interest. Considerably more women than men were included in the studies.

**CONCLUSION:** Although there is plenty of information on the facilitators and barriers to falls prevention exercise in older people, there is a distinct lack of studies investigating differences or similarities in older women's and men's views regarding fall prevention exercise. In order to ensure that fall prevention exercise is appealing to both sexes and that the inclusion of both men and women are encouraged, more research is needed to find out whether gender differences exists and whether practitioners need to offer a range of opportunities and support strategies to attract both women and men to falls prevention exercise.

#### **PDF Y Endnote Y**

##### **How architectural design affords experiences of freedom in residential care for older people**

Van Steenwinkel I, Dierckx de Casterlé B, Heylighen A.

*J. Aging Stud.* 2017; 41: 84-92.

**Affiliation:** University of Leuven (KU Leuven), Academic Centre for Nursing and Midwifery, Kapucijnenvoer 35 blok d - bus 7001, BE-3001 Leuven, Belgium. Electronic address: ann.heylighen@kuleuven.be.

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**DOI** 10.1016/j.jaging.2017.05.001 **PMID** 28610759

### **Abstract**

Human values and social issues shape visions on dwelling and care for older people, a growing number of whom live in residential care facilities. These facilities' architectural design is considered to play an important role in realizing care visions. This role, however, has received little attention in research. This article presents a case study of a residential care facility for which the architects made considerable effort to match the design with the care vision. The study offers insights into residents' and caregivers' experiences of, respectively, living and working in this facility, and the role of architectural features therein. A single qualitative case study design was used to provide in-depth, contextual insights. The methods include semi-structured interviews with residents and caregivers, and participant observation. Data concerning design intentions, assumptions and strategies were obtained from design documents, through a semi-structured interview with the architects, and observations on site. Our analysis underlines the importance of freedom (and especially freedom of movement), and the balance between experiencing freedom and being bound to a social and physical framework. It shows the architecture features that can have a role therein: small-scaleness in terms of number of residents per dwelling unit, size and compactness; spatial generosity in terms of surface area, room to maneuver and variety of places; and physical accessibility. Our study challenges the idea of family-like group living. Since we found limited sense of group belonging amongst residents, our findings suggest to rethink residential care facilities in terms of private or collective living in order to address residents' social freedom of movement. Caregivers associated 'hominess' with freedom of movement, action and choice, with favorable social dynamics and with the building's residential character. Being perceived as homey, the facility's architectural design matches caregivers' care vision and, thus, helped them realizing this vision.

### **PDF Y Endnote Y**

#### **Knowledge levels of falling risks of older nursing students**

Sert H, Seven A, Çetinkaya S, Pelin M.

*Am. Acad. Sch. Res. J.* 2017; 9(3): e1944.

(Copyright © 2017, American Academic and Scholarly Research Journal)

**DOI** unavailable **PMID** unavailable

### **Abstract**

A descriptive and cross-sectional study of 107 senior nursing students in order to determine the knowledge level of the nursing senior students about the risk of falling age; The risk of falling in the elderly is higher in the total scores of the students ( $75,88 \pm 1,32$ ); Age and the risk of falls in elderly people were influenced by the knowledge of the scales used for the risk of falling in hospitals.

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### **PDF N (Will get ILL) Endnote Y**

**New Hick's law based reaction test App reveals "information processing speed" better identifies high falls risk older people than "simple reaction time"**

Qiu H, Xiong S.

*Int. J. Ind. Ergonomics* 2017; 58: 25-32.

(Copyright © 2017, Elsevier Publishing)

DOI 10.1016/j.ergon.2017.01.004 PMID unavailable

**Abstract**

The world is facing a major challenge on population aging and falls present a substantial health problem among the older population. The study is aimed to develop a reaction test App for assessing cognitive function related fall risks in older people. The developed App was tested on one hundred Korean women, consisting of twenty young healthy adults (age:  $22.5 \pm 0.6$ ), forty community-dwelling older people with no history of falls (nonfallers; age:  $72.5 \pm 4.4$ ) and forty matched older people with a history of falls (fallers; age:  $71.8 \pm 4.8$ ). Simple reaction time and information processing speed of participants while performing the reaction test with the developed App were derived through a log-linear regression between the reaction time and number of equi-probable alternative choices based on Hick's law. Older people showed significantly longer simple reaction time and slower information processing speed than the young group. Even though there was no significant difference between older nonfallers and fallers on the simple reaction time ( $p = 0.54$ ), the older fallers had significantly slower information processing speeds than older nonfallers ( $p < 0.001$ ). Further, receiver operating characteristic analysis revealed excellent discriminative ability of information processing speed on classifying fallers and nonfallers, with sensitivity of 85% and specificity of 70%. These findings suggest slow information processing speed from the reaction test is an important risk factor for falling in older people. The developed reaction test App can be a convenient assessment tool for the older individuals and healthcare professionals to test cognitive function related falls risks.

**PDF Y Endnote Y**

**Obstacle avoidance increases asymmetry of crossing step in individuals with Parkinson's disease and neurologically healthy individuals**

Barbieri FA, Simieli L, Orcioli-Silva D, Baptista AM, Borkowske Pestana M, Spiandor Beretta V, Dos Santos PCR, Bucken Gobbi LT.

*J. Mot. Behav.* 2017; ePub(ePub): ePub.

**Affiliation:** Posture and Gait Studies Laboratory (LEPLO), Bioscience Institute, Department of Physical Education, Universidade Estadual Paulista-UNESP, Rio Claro, Brazil.

(Copyright © 2017, Informa - Taylor and Francis Group)

DOI 10.1080/00222895.2016.1271303 PMID 28632105

**Abstract**

The authors' aim was to investigate gait asymmetry of crossing step during obstacle avoidance while walking in people with Parkinson's disease (PD) under and without the effects of dopaminergic medication. Thirteen individuals with PD and 13 neurologically healthy individuals performed 5 trials of unobstructed gait and 10 trials of obstacle crossing during gait (5 trials with each leg) and spatiotemporal parameters were analyzed. Obstacle crossing increased step duration of the crossing step for the most-affected or nondominant limb compared to the crossing step with the least-affected or dominant limb. Individuals with PD without the effects of medication increased step

duration for the step with the least-affected limb compared to the step with the most-affected limb during obstacle crossing.

#### PDF Endnote Y

##### **Older adult falls prevention behaviors 60 days post-discharge from an urban emergency department after treatment for a fall**

Shankar KN, Treadway NJ, Taylor AA, Breaud AH, Peterson EW, Howland J.

*Inj. Epidemiol.* 2017; 4(1): e18.

**Affiliation:** Boston Medical Center Injury Prevention Center, One Boston Medical Center Place, Boston, MA, 02118, USA.

(Copyright © 2017, The author(s), Publisher Springer Science+Business Media)

**DOI** 10.1186/s40621-017-0114-y **PMID** 28626848

#### **Abstract**

**BACKGROUND:** Falls are a common and debilitating health problem for older adults. Older adults are often treated and discharged home by emergency department (ED)-based providers with the hope they will receive falls prevention resources and referrals from their primary care provider. This descriptive study investigated falls prevention activities, including interactions with primary care providers, among community-dwelling older adults who were discharged home after presenting to an ED with a fall-related injury.

**METHODS:** We enrolled English speaking patients, aged  $\geq 65$  years, who presented to the ED of an urban level one trauma center with a fall or fall related injury and discharged home. During subjects' initial visits to the ED, we screened and enrolled patients, gathered patient demographics and provided them with a flyer for a Matter of Balance course. Sixty-days post enrollment, we conducted a phone follow-up interview to collect information on post-fall behaviors including information regarding the efforts to engage family and the primary care provider, enroll in a falls prevention program, assess patients' attitudes towards falling and experiences with any subsequent falls.

**RESULTS:** Eighty-seven community-dwelling people between the ages of 65 and 90 were recruited, the majority (76%) being women. Seventy-one percent of subjects reported talking to their provider regarding the fall; 37% reported engaging in falls prevention activities. No subjects reported enrolling in a fall prevention program although two reported contacting falls program staff. Fourteen percent of subjects ( $n=12$ ) reported a recurrent fall and 8% (7) reported returning to the ED after a recurrent fall.

**CONCLUSIONS:** Findings indicate a low rate of initiating fall prevention behaviors following an ED visit for a fall-related injury among community-dwelling older adults, and highlight the ED visit as an important, but underutilized, opportunity to mobilize health care resources for people at high risk for subsequent falls.

#### PDF Y Endnote Y

##### **Perturbation-based balance training for falls reduction among older adults: current evidence and implications for clinical practice**

Gerards MHG, McCrum C, Mansfield A, Meijer K.

*Geriatr. Gerontol. Int.* 2017; ePub(ePub): ePub.

**Affiliation:** Department of Human Movement Science, NUTRIM School of Nutrition and Translational Research in Metabolism, Maastricht University Medical Center+, Maastricht, the Netherlands.

(Copyright © 2017, Japan Geriatrics Society, Publisher John Wiley and Sons)

DOI 10.1111/ggi.13082 PMID 28621015

### Abstract

Falls are a leading cause of injury, hospitalization and even death among older adults. Although various strength and balance exercise interventions have shown moderate reductions in falls incidence among healthy older adults, no significant falls incidence improvements have been consistently seen in frail older adults or in patient groups with an increased falls risk (e.g. people with Parkinson's disease and stroke). This might be due to a lack of task specificity of previous exercise interventions to the recovery actions required to prevent a fall. Perturbation-based balance training (PBT) is an emerging task-specific intervention that aims to improve reactive balance control after destabilizing perturbations in a safe and controlled environment. Although early studies were carried out predominantly in research laboratory settings, work in clinical settings with various patient groups has been proliferating. A systematic search of recent PBT studies showed a significant reduction of falls incidence among healthy older adults and certain patient groups (e.g. people with Parkinson's disease and stroke), with clinically relevant reductions in frail older adults. The most practical methods in clinical settings might be treadmill-based systems and therapist-applied perturbations, and PBT that incorporates multiple perturbation types and directions might be of most benefit. Although more controlled studies with long-term follow-up periods are required to better elucidate the effects of PBT on falls incidence, PBT appears to be a feasible and effective approach to falls reduction among older adults in clinical settings.

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### PDF Y Endnote Y

#### Prevalence of vitamin D insufficiency and falls in older cancer patients

Zhang X, Sun M, Shah JB, Dinney CPN, Popat UR, Champlin RE, Valero V, Tripathy D, Hedberg AM, Edwards BJA.

*J. Clin. Oncol.* 2017; 35(Suppl 5): e138.

(Copyright © 2017, American Society of Clinical Oncology)

DOI 10.1200/JCO.2017.35.5\_suppl.138 PMID unavailable

### Abstract

**BACKGROUND:** More than 60% of cancer patients are older adults. Such patients undergo age and cancer therapy related changes. Older adults also have geriatric risk factors for falls such as frailty, cognitive impairment (mild cognitive impairment [MCI] and dementia), and malnutrition-including vitamin D deficiency.

**OBJECTIVE:** To assess the prevalence of vitamin D insufficiency and risk factors for falls in older cancer patients. Retrospective cohort study.

**METHODS:** Patients underwent prospective data collection and retrospective analysis. Patients underwent a comprehensive geriatric assessments, including cognitive, functional, nutritional, physical, and comorbidity assessment. Vitamin D was assayed. Bone densitometry was performed. Analysis: Descriptive statistics, and multivariable logistic regression.

**RESULTS:** We enrolled 318 patients and 305 patients with complete data were included for final analysis. Patients were undergoing active cancer care. Patients had gastrointestinal, urologic, breast, lung and gynecologic cancers. The mean age was  $78.4 \pm 6.9$  years. Low bone mass and osteoporosis were very common (80%) in this cohort. Twenty-six percent had one or more falls in the preceding

six months. Dementia and mild cognitive impairment were seen in 33% and 37% of patients, and 53% presented frailty. In 256 patients, 48.8% (n = 125) had Vitamin D insufficiency (< 30 ng/ml). In univariate analysis, co-morbidity (p = 0.05), frailty (p < 0.01), and cognitive impairment (p = 0.02) were significantly associated with falls, while in multivariate analysis, frailty remained significantly associated with falls (OR = 3.51, 95%CI = 1.88, 6.52).

**CONCLUSIONS:** Older cancer patients have a high prevalence of falls, osteoporosis and vitamin D insufficiency, raising the possibility of injurious falls (fractures). Frailty was found to be the most prominent risk factor for falls in this cohort. Greater awareness and targeted interventions such as vitamin D replacement, physical therapy, nutrition interventions, and therapy for low bone mass/osteoporosis will be effective preventing injurious falls.

**PDF Conference Abstract only Endnote Y**

**REDLE: a platform in the cloud for elderly fall detection and push response tracking**

Silapachote P, Srisuphab A, Phongpawarit J, Visetpalitpol S, Jirapasitchai S.

*ECTI Trans. Comput. Info. Technol.* 2017; 10(2): 185-195.

(Copyright © 2017, ECTI Association, Sirindhorn International Institute of Technology)

**DOI** unavailable **PMID** unavailable

**Abstract**

Caring for a rapid and ever-increasing older population, providing social support and monitoring emotional wellness, is the most immediate and most urgent challenge prompted by the global aging of baby boomers. Elderly assisted systems do not only promote independent lifestyles, enhancing their quality of life, but also reduce stress and worry of families and friends. While being physically active is beneficial and much encouraged, it does increase the risk of falls. We developed an affordable fall detection and response tracking application on the cloud platform; mobile cloud computing is a major evolution with rising impact in information technology and enterprises. Our system, named REDLE, features push notifications for fall alerts and real-time maps for tracking and providing locations and phone numbers of nearby hospitals. Implemented on Android, it captures signals from an embedded tri-axial accelerometer and a global positioning system sensor. Coupled with an efficient threshold-based fall detection algorithm for instantaneous responses, REDLE achieved a near perfect fall detection rate and accurate tracking. Users enjoyed the smoothness of our interactive interface, and complimented on its ease of use and familiarity.

**PDF Y Endnote Y**

**Risk factors for falls among older adults following transition from nursing home to the community**

Marrero J, Fortinsky RH, Kuchel GA, Robison

*J. Med. Care Res. Rev.* 2017; ePub(ePub): ePub.

(Copyright © 2017, Sage Periodicals Press)

**DOI** 10.1177/1077558717697012 **PMID** unavailable

**Abstract**

This study analyzes the incidence of falls for older adults who transitioned from institutions to the community through the Connecticut Money Follows the Person demonstration program, identifying intrinsic and extrinsic fall risk factors for this population. This prospective cohort study analyzed data from 648 Money Follows the Person participants aged 65 years and older, using 6- and 12-month posttransition surveys. Of the 648 participants, 161 (25.2%) fell in the first 6 months after transition, while 156 (24.5%) fell between 6 and 12 months after transition. Unmet medical care needs,



depressive symptoms, mistreatment, and previous falls significantly predicted falls. Given the vulnerability of this population and increased use of fall-related health services, fall prevention represents a critical element in posttransition care. Beyond previously identified risk factors, care providers should consider issues such as unmet medical care needs, depressive symptoms, and mistreatment in assessing fall risk.

#### PDF Y Endnote Y

##### **Role of impaired vision during dual-task walking in young and older adults**

Krishnan V, Cho Y, Mohamed O.

*Gait Posture* 2017; 57: 136-140.

**Affiliation:** Department of Physical Therapy, California State University Long Beach, CA, 90840 United States.

(Copyright © 2017, Elsevier Publishing)

**DOI** 10.1016/j.gaitpost.2017.06.006 **PMID** 28624710

##### **Abstract**

While cognitive-motor interference in dual-task activities is well established, it is still unknown how such interference is influenced by concurrent visual challenges. Nineteen community-dwelling healthy, cognitively intact, older adults (Mean±SD=71.45±1.25years, 6 males) and nineteen young adults (Mean±SD=22.25±0.68years, 4 males) performed a cognitive-single-task (serial subtraction by 3), a walking-single-task and a cognitive-walking-dual-task under normal, blurred and peripheral-vision-loss conditions (artificially imposed using goggles). Gait parameters and the number of correct responses were measured. Dual task costs for both walking and cognition were computed. RESULTS showed that higher walking cost was seen with impaired vision ( $p=0.05$ ) and with older adults ( $p=0.03$ ); greater cognitive cost was seen with impaired vision ( $p=0.01$ ), but no difference in cognitive cost was seen between young and older adults. Thus, when faced with impaired vision, both young and older adults appear to allocate less attention to cognition than to walking, and thus prioritize walking. Future work should explore whether dual-task training under visual challenge could reduce cognitive-motor interference and reduce fall risks in older adults.

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#### PDF Y Endnote Y

##### **Severe head injury in very old patients: to treat or not to treat? Results of an online questionnaire for neurosurgeons**

Unterhofer C, Hartmann S, Freyschlag CF, Thomé C, Ortler M.

*Neurosurg. Rev.* 2017; ePub(ePub): ePub.

(Copyright © 2017, Springer Science+Business Media)

**DOI** 10.1007/s10143-017-0833-0 **PMID** unavailable

##### **Abstract**

Due to the aging population, neurosurgeons are confronted with an increasing number of very old patients suffering from traumatic brain injury. Many of these patients present with an acute subdural hematoma. There is a lack of data on neurosurgical decision-making in elderly people. We investigated the importance of imaging criteria, patients' wishes, their surrogates' wishes, and patient demographics on treatment decisions chosen by neurosurgeons. An online questionnaire was sent to all German neurosurgical units via the German Society of Neurosurgery (DGNC). The survey was based on the reported case of an unconscious 81-year-old patient with an acute subdural

hematoma and consisted of 13 questions. Of these questions, nine addressed indication and treatment plan and four evaluated the neurosurgeon's interest in gathering additional information on the patient's social environment and supposed patient's wishes or advance directive. Eighty-five percent of the interviewed neurosurgeons would perform an emergency operation in the presented case. Midline shift (84%), hematoma thickness (81%), and time between traumatic injury and treatment (81%) were considered to be the most important factors for surgical treatment. Gathering information on the social environment of the patient (66%) and discussion with family members (57%) were felt to be either unimportant. Neurosurgeons in Central Europe tend to treat acute subdural hematoma in very old patients based on imaging findings and according to mechanistic views. Social circumstances and patient wishes are considered to be less important. Education of the medical profession and the general public should aim to bring these factors into focus in the decision-making process.

#### PDF Y Endnote Y

#### **Smart phone based fall detection using auto regression modeling in a non-restrictive setting**

Panhwar M, Shah SMS, Shah SMZS, Shah SMZA, Chowdhry BS.

*Ind. J. Sci. Technol.* 2017; 10(5): e111274.

(Copyright © 2017, Informatics Publishing)

**DOI** 10.17485/ijst/2017/v10i5/111274 **PMID** unavailable

#### **Abstract**

Fall detection is an important aspect of the field of accident prevention, ambient assisted living as well as care of the elderly. To address this issue, researchers have employed several approaches including vision based systems, setups that require deployment in a special environment and inertial sensors. Inertial sensors have the advantage of being deployable in mobile systems such as wearable devices and smart phones. An important consideration in using inertial sensors for fall detection is the need to develop techniques that would work without enforcing positional requirements of the sensor device. This paper presents a method for the detection of falls using inertial sensors readings of the smart phone, a tri-axial accelerometer, tri-axial gyroscope and orientation data. We consider inertial sensor data for two falls and three activities of daily living. Using Auto-Regressive (AR) modeling to characterize the measurements from the sensors, we compare Support Vector Machines (SVM) and Neural Networks for use in classifying between these five events. RESULTS indicate that the Neural Network provides better classification accuracy compared to SVM for the purpose of differentiating between falls and the activities of daily living.

#### PDF Endnote Y

#### **Specifying the content of home-based health behaviour change interventions for older people with frailty or at risk of frailty: an exploratory systematic review**

Gardner B, Jovicic A, Belk C, Kharicha K, Iliffe S, Manthorpe J, Goodman C, Drennan VM, Walters K.

*BMJ Open* 2017; 7(2): e014127.

(Copyright © 2017, BMJ Publishing Group)

**DOI** 10.1136/bmjopen-2016-014127 **PMID** unavailable

#### **Abstract**

**OBJECTIVES:** To identify trials of home-based health behaviour change interventions for frail older people, describe intervention content and explore its potential contribution to intervention effects. Design 15 bibliographic databases, and reference lists and citations of key papers, were searched for

randomised controlled trials of home-based behavioural interventions reporting behavioural or health outcomes.

SETTING: Participants' homes.

PARTICIPANTS: Community-dwelling adults aged  $\geq 65$  years with frailty or at risk of frailty.

Primary and secondary outcome measures Trials were coded for effects on thematically clustered behavioural, health and well-being outcomes. Intervention content was described using 96 behaviour change techniques, and 9 functions (eg, education, environmental restructuring).

RESULTS: 19 eligible trials reported 22 interventions. Physical functioning was most commonly assessed (19 interventions). Behavioural outcomes were assessed for only 4 interventions.

Effectiveness on most outcomes was limited, with at most 50% of interventions showing potential positive effects on behaviour, and 42% on physical functioning. 3 techniques (instruction on how to perform behaviour, adding objects to environment, restructuring physical environment) and 2 functions (education and enablement) were more commonly found in interventions showing potential than those showing no potential to improve physical function. Intervention content was not linked to effectiveness on other outcomes.

CONCLUSIONS: Interventions appeared to have greatest impact on physical function where they included behavioural instructions, environmental modification and practical social support. Yet, mechanisms of effects are unclear, because impact on behavioural outcomes has rarely been considered. Moreover, the robustness of our findings is also unclear, because interventions have been poorly reported. Greater engagement with behavioural science is needed when developing and evaluating home-based health interventions.

PROSPERO registration number ID=CRD42014010370

#### PDF Y Endnote Y

### **Understanding temporal relationships between depression, falls, and physical activity in a cohort of post-hospitalized older adults - a breakthrough or a conundrum?**

Lee DA, Lalor AF, Russell G, Stolwyk R, Brown T, McDermott F, Haines TP.

*Int. Psychogeriatr.* 2017; ePub(ePub): ePub.

**Affiliation:** Director of Allied Health Research Unit, Monash Health and Director of Research, Southern Physiotherapy Clinical School, Physiotherapy Department, Monash University (Peninsula Campus), McMahons Road, Frankston, Victoria 3199, Australia.

(Copyright © 2017, Cambridge University Press)

**DOI** 10.1017/S104161021700103X **PMID** 28625203

#### **Abstract**

**BACKGROUND:** Clinical depression affects approximately 15% of community-dwelling older adults, of which half of these cases present in later life. Falls and depressive symptoms are thought to co-exist, while physical activity may protect an older adult from developing depressive symptoms. This study investigates the temporal relationships between depressive symptoms, falls, and participation in physical activities amongst older adults recently discharged following extended hospitalization.

**METHODS:** A prospective cohort study in which 311 older adults surveyed prior to hospital discharge were assessed monthly post-discharge for six months. N = 218 completed the six-month follow-up. Participants were recruited from hospitals in Melbourne, Australia. The survey instrument used was designed based on Fiske's behavioral model depicting onset and maintenance of depression. The baseline survey collected data on self-reported falls, physical activity levels, and depressive symptoms. The monthly follow-up surveys repeated measurement of these outcomes.

**RESULTS:** At any assessment point, falls were positively associated with depressive symptoms; depressive symptoms were negatively associated with physical activity levels; and, physical activity levels were negatively associated with falls. When compared with data in the subsequent assessment point, depressive symptoms were positively associated with falls reported over the next month (unadjusted OR: 1.20 (1.12, 1.28)), and physical activity levels were negatively associated with falls reported over the next month (unadjusted OR: 0.97 (0.96, 0.99) household and recreational), both indicating a temporal relationship.

**CONCLUSION:** Falls, physical activity, and depressive symptoms were inter-associated, and depressive symptoms and low physical activity levels preceded falls. Clear strategies for management of these interconnected problems remain elusive.

#### PDF Endnote

##### **Fall risk in people with MS: a Physiological Profile Assessment study**

Hoang PD, Baysan M, Gunn H, Cameron M, Freeman J, Nitz J, Low Choy NL, Lord SR.

*Mult. Scler. J. Exp. Transl. Clin.* 2016; 2: 2055217316641130.

**Affiliation:** Neuroscience Research Australia and University of New South Wales, Sydney Australia.  
(Copyright © 2016, SAGE Publications)

**DOI** 10.1177/2055217316641130 **PMID** 28607722 **PMCID** PMC5433510

#### Abstract

**INTRODUCTION:** The Physiological Profile Assessment (PPA) is used in research and clinical practice for assessing fall risk. We compared PPA test performance between people with multiple sclerosis (MS) and healthy controls, determined the fall-risk profile for people with MS and developed a reference database for people with MS.

**METHODS:** For this study, 416 ambulant people with MS ( $51.5 \pm 12.0$  years) and 352 controls ( $52.8 \pm 12.2$  years) underwent the PPA (tests of contrast sensitivity, proprioception, quadriceps strength, reaction time and sway) with composite fall-risk scores computed from these measures. MS participants were followed prospectively for falls for 3 months.

**RESULTS:** The MS participants performed significantly worse than controls in each PPA test. The average composite fall-risk score was also significantly elevated, indicating a "marked" fall risk when compared with controls. In total, 155 MS participants (37.3%) reported 2 + falls in the follow-up period. Frequent fallers performed significantly worse than non-frequent fallers in the contrast sensitivity, reaction time and sway tests and had higher PPA composite scores.

**CONCLUSIONS:** In line with poor PPA test performances, falls incidence in people with MS was high. This study provides comprehensive reference data for the PPA measures for people with MS that could be used to inform future research and clinical practice.

#### PDF Y Endnote Y

##### **Re: Anticholinergic medication use and falls in postmenopausal women: findings from the Women's Health Initiative Cohort Study**

Griebing TL.

*J. Urol.* 2017; 198(1): 180-182.

(Copyright © 2017, American Urological Association, Publisher Elsevier Publishing)

**DOI** 10.1016/j.juro.2017.04.025 **PMID** 28618695

**Abstract** Editorial [Abstract unavailable]

#### PDF Y Endnote Y

## **Trends in the leading causes of injury mortality, Australia, Canada, and the United States, 2000-2014**

Mack K, Clapperton A, Macpherson A, Sleet D, Newton D, Murdoch J, MacKay JM, Berecki-Gisolf J, Wilkins N, Marr A, Ballesteros M, McClure R.

*Can. J. Public Health* 2017; 108(2): e185-e191.

**Affiliation:** US Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA. [kmack@cdc.gov](mailto:kmack@cdc.gov).

(Copyright © 2017, Canadian Public Health Association)

**DOI** unavailable **PMID** 28621655

### **Abstract**

**OBJECTIVES:** The aim of this study was to highlight the differences in injury rates between populations through a descriptive epidemiological study of population-level trends in injury mortality for the high-income countries of Australia, Canada and the United States.

**METHODS:** Mortality data were available for the US from 2000 to 2014, and for Canada and Australia from 2000 to 2012. Injury causes were defined using the International Classification of Diseases, Tenth Revision external cause codes, and were grouped into major causes. Rates were direct-method age-adjusted using the US 2000 projected population as the standard age distribution.

**RESULTS:** US motor vehicle injury mortality rates declined from 2000 to 2014 but remained markedly higher than those of Australia or Canada. In all three countries, fall injury mortality rates increased from 2000 to 2014. US homicide mortality rates declined, but remained higher than those of Australia and Canada. While the US had the lowest suicide rate in 2000, it increased by 24% during 2000-2014, and by 2012 was about 14% higher than that in Australia and Canada. The poisoning mortality rate in the US increased dramatically from 2000 to 2014.

**CONCLUSION:** Results show marked differences and striking similarities in injury mortality between the countries and within countries over time. The observed trends differed by injury cause category. The substantial differences in injury rates between similarly resourced populations raises important questions about the role of societal-level factors as underlying causes of the differential distribution of injury in our communities.

**PDF N Endnote Y**